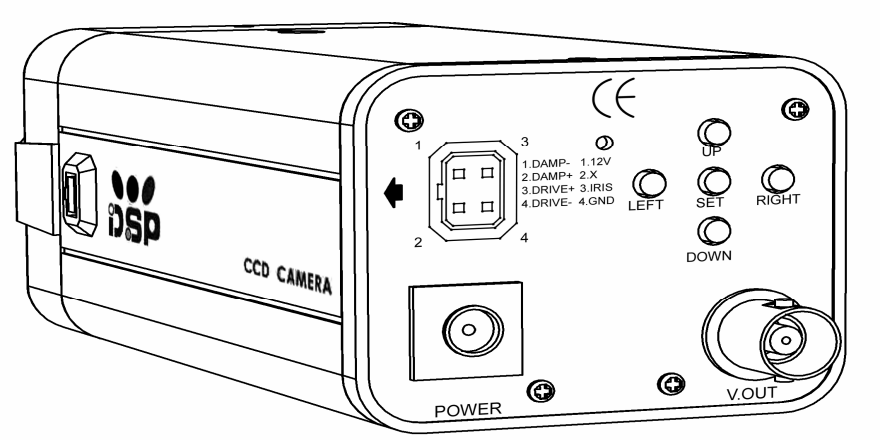
SERVICE MANUAL

1/3” SONY DSP COLOR CCD CAMERA

O.S.D. WDR SERIES



The serial number of this product may be found on the bottom of the unit.
You should note the serial number of this unit in the space provided and retain this instruction as a permanent record of your purchase to aid identification in the event of theft.

Model No. _____

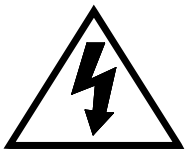
Serial No. _____

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK), NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is interned to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

▲ Before attempting to connect this product, please read and keep this manual for future use.

Safety Warning

1. Do not open the cover, it may cause electric shock.
   Ask a qualified service person for maintenance when you encounter any problems.
2. Install the camera away from TV, radio transmitter, magnet, electric motor, transformer, audio speakers because the magnetic fields generated from above devices will distort the video image.
3. Place this camera on a solid base. Install the camera away from stoves or other heat generating devices as the high temperature could cause deformation, discoloration or other damages to the camera.

Install the camera at where the temperature range does not exceed 0°C to 50°C (32°F to 122°F)

4. Do not expose and operate the camera in the rain and humid areas.
5. Use only soft dry cloth to clean the camera. Also use lens tissue or cotton tipped applicator and ethanol to clean the CCD sensor and camera lens.
6. When the camera is not in use, put the cover cap on the lens mount. Please do not touch the surface of CCD by bare hand.

Introduction

This OSD series CCD camera introduces a new level of high picture quality through the digital signal processing LSI's technology for advanced video surveillance. It provides the most reliable and accurate color picture in security industries.

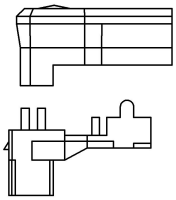
Main Features

- Color camera with SONY 1/3" Super HAD CCD sensor in metal case.
- Employs Digital Signal Processor (DSP) chip-set for image control.
- Controlled by OSD (On Screen Display) menu.
- Programmable GAMMA processing.
- Color rolling suppress, breathing suppress.
- 3D-NR (3D Noise Reduction), digital WDR (Wide Dynamic Range).
- Digital zoom, motion detection, mirror, privacy mask, 256X sens-up.
- High sensitivity CCD enables a clear image even in 0.01Lux.
- Video / DC drive lens can be selected. Supports both C / CS mount lens.
- Support Line Lock external synchronization (AC only).

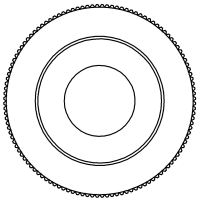
Parts Names & Components

Hex Screwdriver

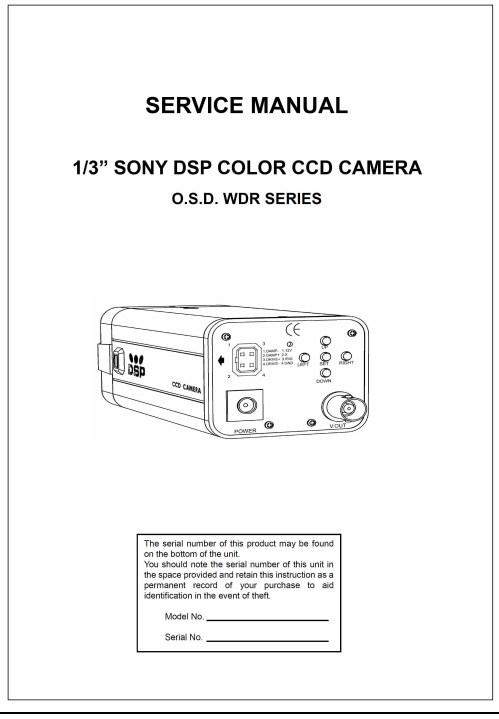
Auto Iris Plug



C-Mount Ring



Manual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1/3" SONY DSP COLOR CCD CAMERA
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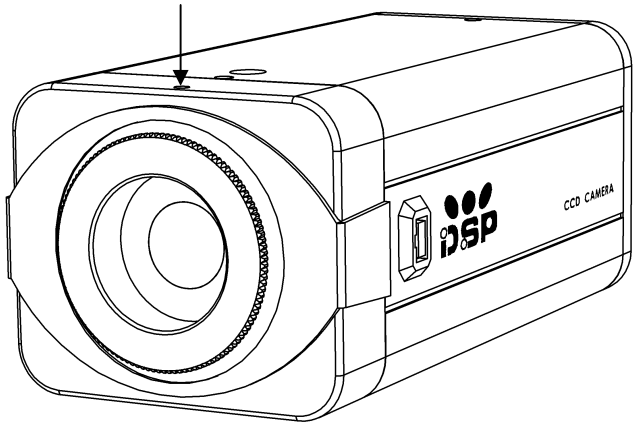
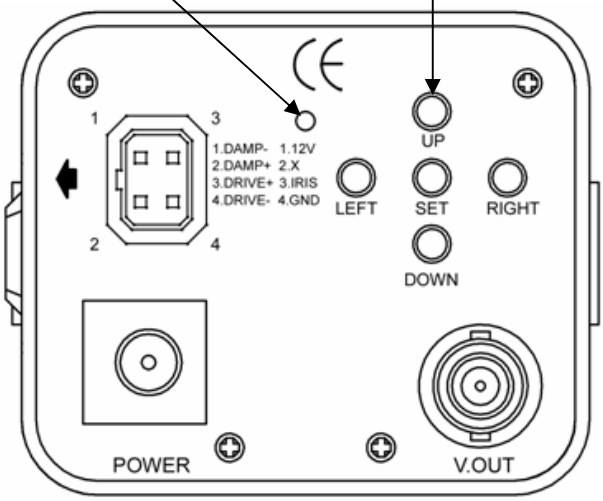
Hole to fix lens



Auto iris connector

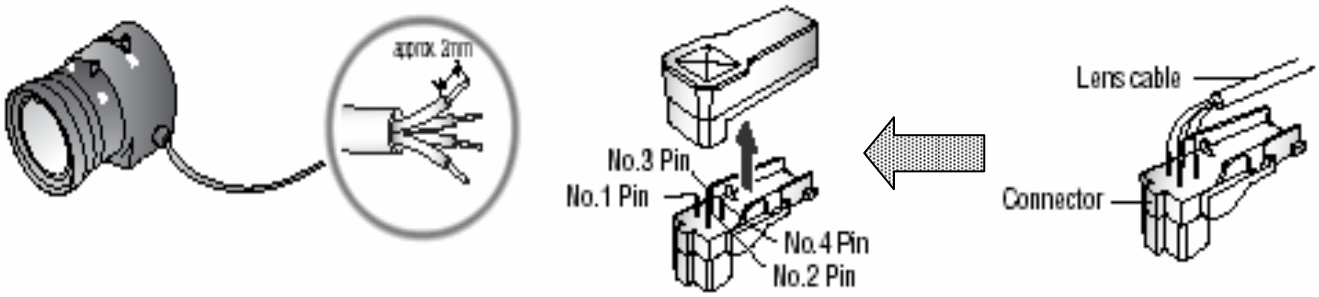
Power LED

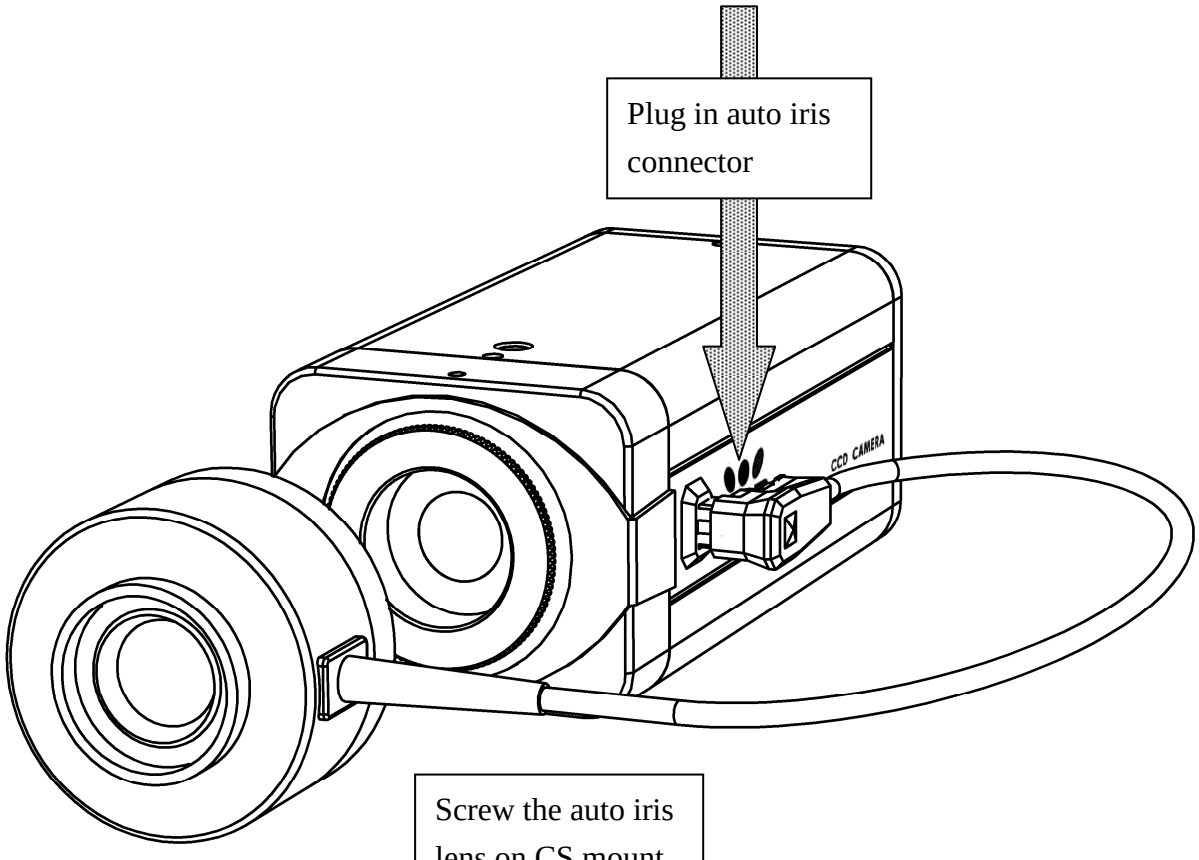
Selection & setting buttons



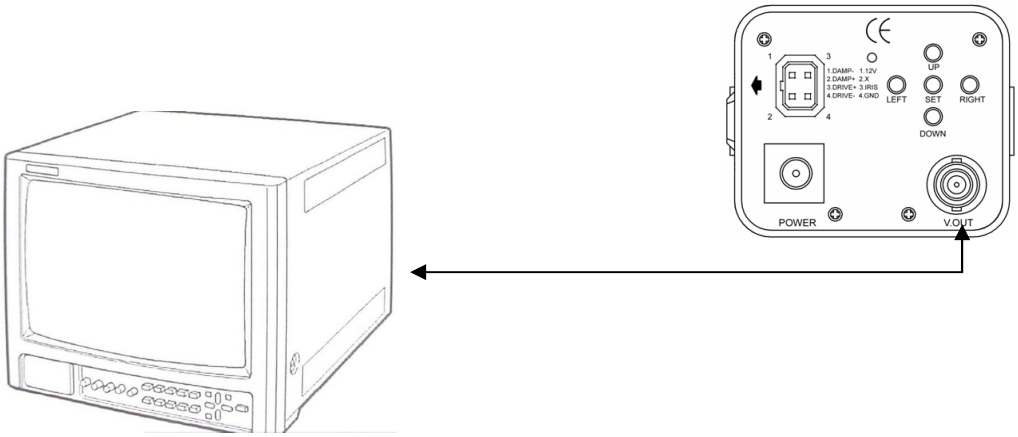
Auto Iris Function

	DC DRIVE	VIDEO DRIVE
Pin 1 (Red)	Drive -	Volt +
Pin 2 (N.C)	Drive +	N.C
Pin 3 (White)	Damp +	IRIS
Pin 4 (Black)	Damp -	GND





Installation Instructions



(1) Remove the cap from the lens mount.

(2) Select the C mount lens (with mount ring) or CS mount lens.

(3) Screw and fasten the lens into the lens mount.

(4) Connect the video output wire between monitor and camera through 75ohm type coaxial cable.

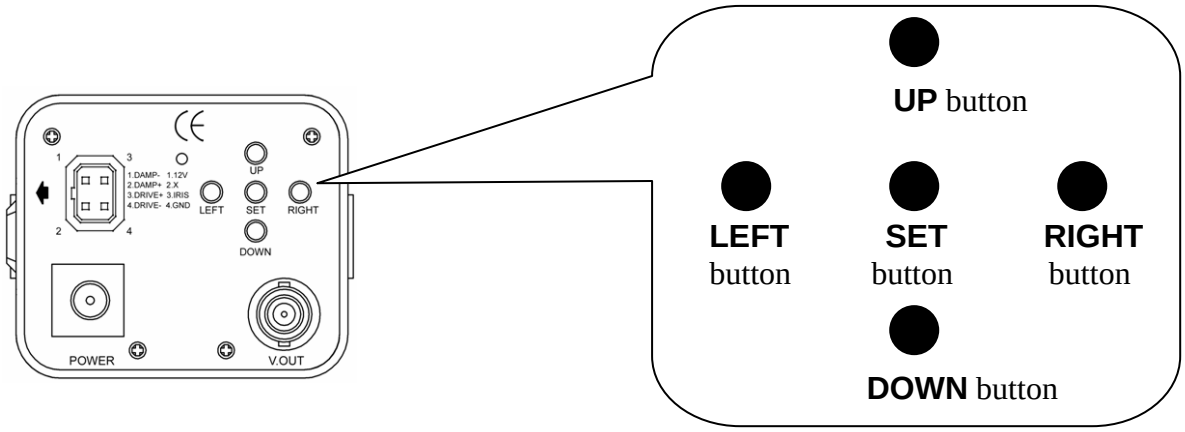
(5) Connect the power cord input.

(6) When monitor shows the picture, please adjust the focus and iris of the lens to obtain the best image according to the following procedures:

- Choose objects at a distance about 5 ~ 10 meter away.
- Loosen the mount lens fixing screw (use L wrench), if necessary.
- Turn the lens and the mount together until image is clear.
- Screw the mount to camera.

(7) Fix camera to the bracket, if necessary.

Switch Definition



SET button

Press to display the menu. In the menu, this button functions as “ENTER”.

UP & DOWN buttons

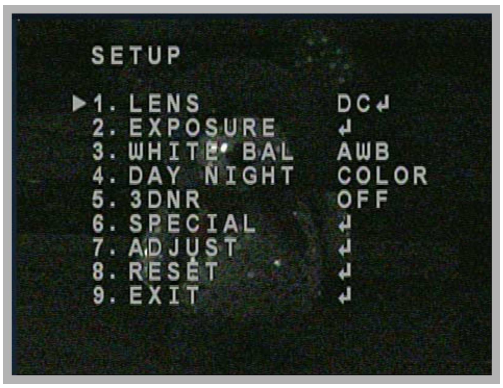
Press to select the item of menu.

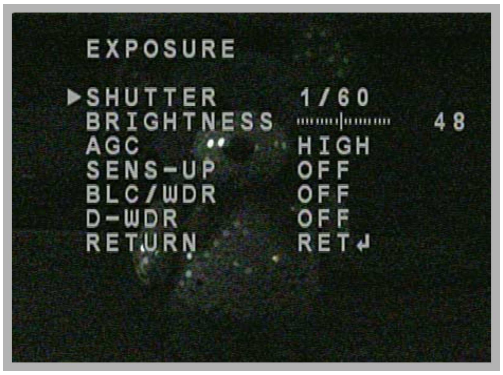
LEFT & RIGHT buttons

Press to change the item value.

Menu Operation

MAIN MENU





- Press the SET button to display the menu on screen.
- Press the UP or DOWN button to select the item.
- The selected item will be displayed in yellow text.
- Press the LEFT or RIGHT button to change mode.
- The ENTER symbol ↵ means there is a sub-menu. Press the SET button to enter to the sub-menu.
- Select the EXIT item and press the SET button to finish setting.

⑦

✪ **LENS**

To select the lens mode depending on the lens used:

- **MANUAL** When manual iris lens is used.
- **DC** When auto iris lens that requires a DC drive signal is used. **BRIGHTNESS** (0~100) adjustable.
- **VIDEO** When auto iris lens that requires a video drive signal is used.

✪ **EXPOSURE**

➢ **SHUTTER**

To change the shutter setting and speed based on the environment.

- **AUTO** After an immobile brightness value is set, the shutter speed will adjust automatically to achieve the value.
- **FLK** Select when flickering occurs on the screen due to an Imbalance between illumination and frequency. Under this mode, the shutter speed is NTSC: 1/100; PAL: 1/120.
- FIXED **1/60** (for NTSC) or **1/50** (for PAL); **1/250**; **1/500**; **1/2,000**; **1/5,000**; **1/10,000**; **1/100,000**; **X256**; **X128**; **X64**; **X32**; **X16**; **X8**; **X4**; **X2** adjustable.

➢ **BRIGHTNESS**

Value 0~100 adjustable.

➢ **AGC (Auto Gain Control)**

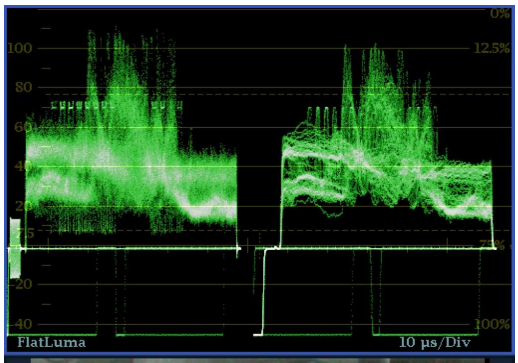
Enable this function to heighten the brightness signal automatically.

- ON **LOW**; **MIDDLE**; **HIGH** adjustable.
- **OFF** To disable this function.

➢ **SENS-UP (Sensitivity-Up)**

Digital low shutter enables to capture a color image at low light environment.

- **AUTO** **X2**; **X4**; **X8**; **X16**; **X32**; **X64**; **X128**; **X256**.
- **OFF** To disable this function.



➢ **BLC (Backlight Compensation)**

When there is strong backlight behind the object, enable this function to achieve a clear image of the background as well as the object. 64 zone scales adjustable.

- **BLC** **GAIN**: **LOW**; **MIDDLE**; **HIGH** adjustable.
- **HSBLC** Hightlight suppress BLC.
- **OFF** To disable this function.

➢ **D-WDR (Digital Wide Dynamic Range)**

When there is a very strong backlight behind the object, more than the AGC function can handle, enable this function to achieve a clear image of the background as well as the object.

- ON **INDOOR**; **OUTDOOR** adjustable.
- **OFF** To disable this function.

✪ **WHITE BAL (White Balance)**

- **ATW** Auto Tracking White Balance. The white balance will adjust continually according to the color temperature of the object. The range of color temperature is 1,800°K~10,500°K.
- **AWB** Auto White Balance. The white is correct in any condition. (To adjust the white balance, focus the camera to white paper and press SET button to obtain the optimum state under current illumination. If the environment including the light source is changed, the white balance has to be adjusted again).
- **AWC** Auto White Balance Control.
- **MANUAL** The manual adjustment mode enables finer adjustment of ATW and AWB. Please select ATW mode or AWB mode first and change to MANUAL mode. Set the appropriate color temperature and then increase or decrease the **RED** (0~100) and **BLUE** (0~100) color values while monitoring the color changes on the object.
- MODE **INDOOR**; **OUTDOOR** adjustable.

✪ **DAY NIGHT**

- **COLOR** Common mode.
- **AUTO** Automatically changes between color mode under bright light environment and B/W mode under low light environment. Set the value of **DELAY** (0~63); **S-LEVEL** (START LEVEL 0~100); **E-LEVEL** (END LEVEL 0~100) to define the changing time.
- **B/W** Stay in B/W mode for clear and the better visibility image under low light environment. **BURST** (ON/OFF) adjustable.

<<ATTENTION>> This function works with AGC.

✪ **3DNR (3D Noise Reduction)**

Enable this function to reduce the noise at low light environment. This function enables the camera to use a higher AGC level to electronically enhance the sensitivity of the camera in low light environment (higher AGC, more noise)

- **ON** **LEVEL** (0~100) adjustable.
- **OFF** To disable this function.

✪ **ADJUST**

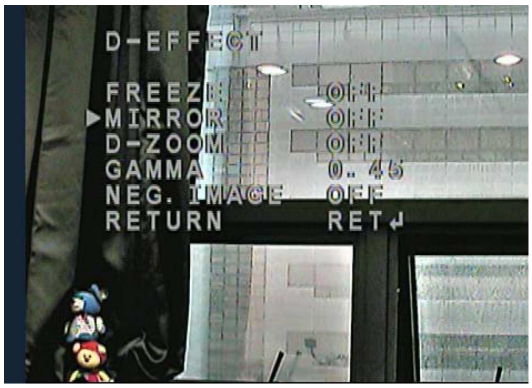
Adjust **SHAPRNESS** (0~31); **BLUE**; **RED** for clearer and more colorful image.

SPECIAL MENU

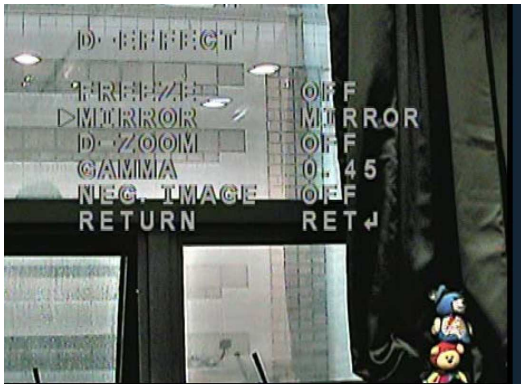
✪ CAM TITLE (Camera Title)

✪ D-EFFECT

- **FREEZE** Enable this function to hold a still image.
- **MIRROR** **OFF**; **MIRROR**; **V-FLIP**; **ROTATE** adjustable.



MIRROR OFF

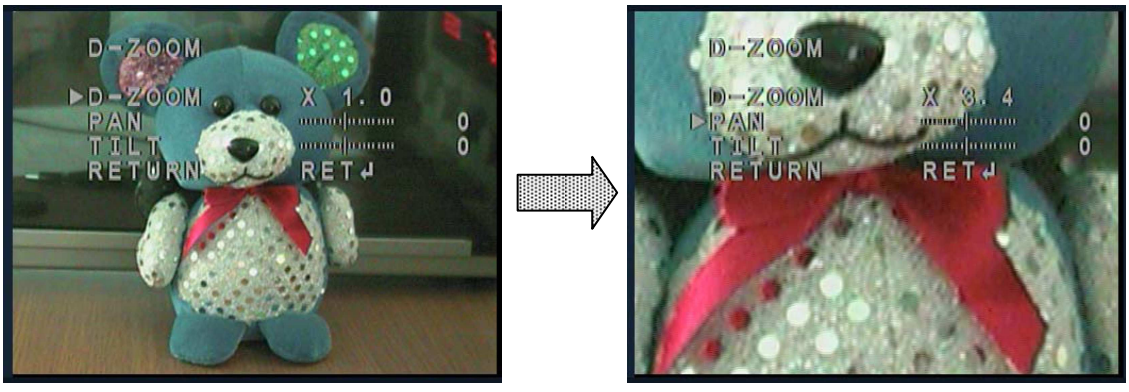


H-MIRROR ON

V-MIRROR ON

ROTATE ON

- **D-ZOOM (Digital Zoom)**



- **GAMMA** Adjustable value between 0.05 and 1.00.
- **NEG. IMAGE** Negative image ON/OFF adjustable.

✪ MOTION

When the object on screen is moving, the camera will detect the changes and display a warning on screen.

- **ON** Any motion in the selected area is observed.
  - **AREA SELECT** AREA1~AREA4 selectable.
  - **AREA DISPLAY** ON/OFF adjustable.
  - ZONE 64 scales adjustable.
  - **SENSITIVITY** Level 0~40 adjustable.
  - **MOTION VIEW** ON/OFF adjustable.
- **OFF** Not active.

✪ PRIVACY

Cover the areas you do not wish to appear on screen.

- **ON** Enable this function.
  - **AREA SELECT** AREA1~AREA8 selectable.
  - **AREA DISPLAY** ON/OFF adjustable.
  - ZONE Adjust the scale & **COLOR** (0~15) of zone.
- **OFF** To disable this function.

✪ SYNC

Select a sync mode depending on power source.

- **INT** Internal lock for DC power source.
- **L/L** Line lock for AC power source.

✪ LANGUAGE

Supports **ENGLISH**; **T.CHINESE** (Traditional Chinese); **S.CHINESE** (Simple Chinese); **JAPANESE**.

Specification

MODEL	OSD WDR	OSD WDR with ICR (True DAY & NIGHT)
IR OPTICAL FILTER	Built-in anti-aliasing IR-cut filter	Built-in anti-aliasing IR-pass (850nm) filter
PICK-UP DEVICE	Sony 1/3" Super HAD High Resolution CCD	
EFFECTIVE PICTURE ELEMENTS (H*V)	NTSC: 768*494 PAL: 752*582	
SIGNAL PROCESSOR	D.S.P. (Digital Signal Processor)	
RESOLUTION	540 TV Lines	
MIN. ILLUMINATION	0.01Lux / F1.2	
S/N RATIO	More than 50 dB	
POWER SUPPLY	DC12V; AC24V; AC110V; AC230V; AC90~260V Switching; DC12V/AC24V Dual Power	
CONTROL	O.S.D. (On Screen Display)	
LENS MOUNT	C / CS Mount	
AUTO IRIS	Support Both Video Drive & DC Drive Auto Iris Lens	
AUTO ELECTRONIC SHUTTER	NTSC: 1/60s~1/100,000s (AES ON); 1/60s (AES OFF) PAL: 1/50s~1/110,000s (AES ON); 1/50s (AES OFF)	
VIDEO OUTPUT	1 Vp-p Composite Video / 75 ohm Load	
POWER CONSUMPTION	3.5W (Max.)	
OPERATING TEMP.	-10°C~50°C (14°F~122°F)	
MENU OPERATION		
MAIN MENU	LENS: DC (BRIGHTNESS: 0~100) / VIDEO / MANUAL EXPOSURE: ➢ SHUTTER: AUTO / FLK / X256 / X128 / X64 / X32 / X16 / X8 / X4 / X2 / 1/60 (1/50) / 1/250 / 1/500 / 1/2,000 / 1/5,000 / 1/10,000 / 1/100,000 ➢ BRIGHTNESS: 0~100 ➢ AGC: OFF / LOW / MIDDLE / HIGH ➢ SENS-UP: OFF / AUTO (X2 / X4 / X8 / X16 / X32 / X64 / X128 / X256) ➢ BLC: OFF / BLC (GAIN: LOW / MIDDLE / HIGH) / HSBLC; 64 zone scales adjustable ➢ D-WDR: OFF / INDOOR / OUTDOOR WHITE BAL.: ATW / AWB / AWC / MANUAL (RED / BLUE) / INDOOR / OUTDOOR DAY NIGHT: B/W / COLOR / AUTO (DELAY: 0~63 / S-LEVEL / E-LEVEL) 3DNR: OFF / ON (LEVEL: 0~100) ADJUST: SHARPNESS (0~31) / BLUE (0~100) / RED (0~100) RESET: FACTORY REST	
SPECIAL MENU	CAM TITLE: ON / OFF D-EFFECT: ➢ FREEZE: ON / OFF ➢ MIRROR: OFF / MIRROR / V-FLIP / ROTATE ➢ D-ZOOM: 1~32X ➢ GAMMA: 0.05~1.0 adjustable ➢ NEG. IMAGE: ON / OFF MOTION: OFF / ON (AREA: 1~4 / 64 zone scales adjustable / SENSITIVITY: 0~40) PRIVACY: OFF / ON (AREA: 1~8 zone scale adjustable / COLOR: 0~15) SYNC: INT / L/L LANGUAGE: ENGLISH / T.CHINESE / S.CHINESE / JAPANESE	